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EXAMINER	
NATNAEL, PAULOS M	

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/008,484	WILLIS, DONALD HENRY	
	Examiner	Art Unit	
	Paulos M. Natnael	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2005 and 22 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-11 and 13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-11 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims **1-4, 6-11 and 13** rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al., U.S. Patent No. 6,437,828.

Considering claim **1**, Chambers et al discloses the following claimed subject matter, note;

a) the claimed method of receiving the standard definition television signal to provide a received signal, is met by the A/V sub-system 102, figs.1-4, which is capable of receiving several signals including from TV, VCR, DSS, and FM. (see also col. 5, lines 40-44)

b) the claimed method of sampling the received signal to provide a sampled digital video signal, is met by the A/D converter 310 (fig.3) in the path 300 within the A/V subsystem 102.

c) deinterlacing the sampled digital video signal to provide a progressive line signal, is met by the deinterlacer 212, fig.3;

d) the claimed method of doubling the progressive line signal to provide a predetermined number of active lines of video in a frame, is met by the scaler 408,

which further scales the video signal in the PC 104 to output a scaled, deinterlaced video signal to the progressive display monitor 110, fig. 3; (see also Abstract, wherein Chambers teaches that the "combination of the line doubler [402] and the scaler [408] is made to function as a line quadrupler.") [emphasis added by examiner]

Except for;

e) displaying the predetermined number of active lines of video on the high definition matrix display in a shortened vertical interval that compensates for the transmission of black lines transmitted at the top and bottom of the display.

Regarding e), Chambers et al. disclose high-resolution and progressive scan monitor 110. Chambers discloses a de-interlacer and line-doubler. Chambers, within the line-quadrupler system, teaches a scaler 408 that is "used to control vertical underscan or overscan for TV display. That is, the scaler 408 serves to stretch or squeeze the video data so that it fits into a window 410 on the screen of display 110....(col. 5, lines 55-67) Therefore, although Chambers does not use the term or terms displaying the predetermined number of active lines of video on the high definition matrix display in a "shortened vertical interval" that compensates for the transmission of black lines transmitted at the top and bottom of the display, it would have been obvious to the skilled in the art that the effect of the line quadrupler of chambers would be to control vertical interval which in turn would control the lines on the top and bottom, i.e, in the well-known and so-called letter-box format, by squeezing or stretching the video signal to fit a desired screen in the SVGA display, and therefore implement the disclosure of Chambers accordingly.

Considering claim **2**, the method of claim 1, where the method further comprises the step of storing the progressive line signal into a memory before the step of doubling, is met by EDO 412, fig.4, which is used to store the received data from the AV 102 and then read from it to display window 410. (see col. 6, lines 1-7)

Considering claim **3**, the method of claim 1, wherein the step of doubling comprises the step of reading each line of the progressive line signal twice from the memory to produce a standard 960p signal, wherein the progressive line signal is a 480p signal, is met by the output signal 1440X960, which is double the input signal 720X480 (see fig.4) and by the disclosure that "...Graphics board 404 supplies video output data in a 1440.times.960 format (960 lines of 1440 pixels) de-interlaced or 720.times.960 interlaced...Interlaced output reduces required bandwidth. A simple manner to implement the interlaced output is to shift either the odd or the even fields by a half a single line, thus displaying the same field twice. This may introduce some line flicker, but this is acceptably little because of the now finer line structure." (col. 6, lines 8-17)

Considering claim **4**, the method of claim 2, wherein the method further comprises the step of reading each line of the progressive line signal twice from the memory at a speed fast enough to produce the doubling of each line of the progressive line signal in the frame and to transmit the frame to the display in a shorter interval than was used to write the progressive line signal to the memory.

Regarding claim 4, Chambers et al., as shown in claim 3, discloses a doubled 1380X960 output signal (fig.4). Chambers also teaches that the combination of the doubler and scaler 408 functions as a line quadrupler. (see Abstract) Chambers does not specify the process of the doubler or the scaler. Nevertheless, the Examiner takes Official Notice here in that the method of reading lines of video data twice as fast than the speed of writing the data lines into a memory is notoriously well-known in the art, and therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Chambers by providing a memory within or instead of the scaler 408 to read the video signal at higher speed than it was written, so that the circuit is made compact by using only one memory instead of the memory EDO 412 and the scaler 408.

Considering claim **6**, the method of claim 1, wherein the method further comprises the steps of writing the signal corresponding to the predetermined number of active lines of video into a memory and reading out the predetermined number of active lines of video from the memory in a shorter time interval than was used to write the signal corresponding to the predetermined number of active lines of video into the memory.

Regarding claim 6, see rejection of claim 4.

Considering claim **7**,

a) wherein the signal corresponding to the predetermined number of active lines is a 960p frame which is read out of the memory...;

Regarding a), see rejection of claim 3.

b) the claimed transmitted to the display in approximately 88% of a vertical period",

As for b), Chambers et al. does not specify any such number, however, it would be obvious matter of design choice to choose a particular speed at which the data is transmitted to the display or read from or written into memory, since the applicant has not disclosed that transmitting at 88% of the vertical period solves any stated problem or is for any particular purpose and it appears that any similar number, 90%, 91% or 87% for that matter, would perform equally well.

Considering claim **8**, Chambers discloses the following claimed subject matter, note;
a) receiving the standard definition television signal to provide a received a signal, is met by the A/V sub-system 102 (figs.1 and 4), which is capable of receiving several signals including TV, VCR, DSS, and FM signals. (see also col. 5, lines 40-44)
b) sampling the received signal to provide a sampled digital video signal, is met by A/D converter 310 (fig.3) in the path 300 within the A/V subsystem 102.
c) deinterlacing the sampled digital video signal to provide a progressive line signal, is met by the deinterlacer 212, fig.3;
d) doubling the progressive line signal to provide a predetermined number of active lines of video in a frame, is met by the scaler 408, which further scales the video signal in the PC 104 to output a scaled, deinterlaced video signal to the progressive display monitor 110, fig. 3; (see also Abstract, wherein Chambers teaches that the "combination of the line doubler [402] and the scaler [408] is made to function as a line quadrupler.") [emphasis added]

e) storing the frame containing the predetermined number of active lines in a memory, is met by EDO 412, fig.4;

Except for;

f) reading the frame from memory and transmitting it to the high definition matrix display in a shortened vertical interval.

Regarding f), see rejection of claim 1(e) and claim 4.

Considering claim **9**, the method of claim 8, wherein the shortened vertical interval is approximately 88% of a vertical interval.

See rejection of claim 7(b).

Considering claim **10**, the method of claim 8, wherein the step of doubling comprises the step of repeating each line of the progressive line signal to produce a standard 960p signal, wherein the progressive line signal is a 480p signal.

See rejection of claim 1(c) and claim 3.

Considering claim **11**, the method of claim 8, wherein step of storing the frame, comprises the step of storing a 960p signal into the memory, is met by the disclosure that the "content of memory 412 represents the content of window 410" (col. 6, lines 5-7) which means the memory 412 stores the output data 1480X960, fig.4. [Note, the fig. 4 shows 1480X360 which is clearly a typo error. It should have been 1480X960, double 720X480 input signal)

Considering claim **13**, the method of claim 8, wherein the signal corresponding to the predetermined number of active lines is a 960p frame which is read out of the memory and transmitted to the display in approximately 88% of a vertical interval.

Regarding claim **13**, see rejection of claim 7.

Response to arguments

Applicant argues "the step of displaying the predetermined number of active lines of video on the high definition matrix display in a shortened vertical interval that compensates for the transmission of black lines transmitted at the top and bottom of the display" is an important element of the claimed invention since it facilitates the display of a standard definition television signal on a high definition matrix display without significantly degrading the displayed picture....Chambers et al. nor Adams et al. disclose "displaying..."

Adams et al was used for its teaching of progressive scan display. In this office action, Adams has not been used, thus, the argument against Adams is moot.

The examiner submits that Chambers et al. discloses a line-quadrupler in home theater using line-doubler of A/V-part and scaler in graphics controller of PC-part.The combination of the line doubler and the scaler is made to function as a line quadrupler. The system of Chambers can take interlaced video input and convert it into deinterlaced or progressive video in order to display it on progressive scan monitor 110. Chambers, as shown in the rejection of claim 1, discloses a de-interlacer and line-doubler. More importantly, Chambers within the line-quadrupler system teaches a scaler 408 that is

"used to control vertical underscan or overscan for TV display. That is, the scaler 408 serves to stretch or squeeze the video data so that it fits into a window 410 on the screen of display 110....(col. 5, lines 55-67) Even though Chambers does not use the term a "shortened vertical interval" that is used to compensate for the transmission of black lines transmitted at the top and bottom of the display, it would have been obvious to those with ordinary skill in the art the effect of the line quadrupler of chambers would be to control vertical interval which in turn would control the lines on the top and bottom of the screen (smaller number of lines for larger aspect ratio or vice versa) that form the well-known letter-box format, by squeezing or stretching the video signal to fit a desired screen in the SVGA display.. Therefore, the argument that Chambers et al does not disclose "black lines transmitted at the top and bottom of the display" is unpersuasive, since it is well known in the art that data such as closed captioned and other text may be transmitted in the Vertical Black Interval (VBI) in the top and bottom of the display.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (571) 272-7354. The examiner can normally be reached on 10:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571)272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paulos M. Natnael
Primary Examiner
Art Unit 2614

PMN
August 31, 2005